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TENT COOPERATION TREA

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

HUNTSMAN, Peter, H.
1 Little Collins Street
Melbourne, VIC 3000
AUSTRALIE

Date of mailing (day/month/year) 01 May 2001 (01.05.01)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference 2313242/PHH	
International application No. PCT/AU00/00824	International filing date (day/month/year) 07 July 2000 (07.07.00)

1. The following indications appeared on record concerning:	
<input checked="" type="checkbox"/> the applicant	<input type="checkbox"/> the inventor <input type="checkbox"/> the agent <input type="checkbox"/> the common representative
Name and Address ORICA AUSTRALIA PTY LTD 1 Nicholson Street Melbourne, VIC 3000 Australia	State of Nationality AU
	State of Residence AU
	Telephone No. -
	Facsimile No. -
2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:	
<input checked="" type="checkbox"/> the person	<input type="checkbox"/> the name <input type="checkbox"/> the address <input type="checkbox"/> the nationality <input type="checkbox"/> the residence
Name and Address ORICA EXPLOSIVES TECHNOLOGY PTY LTD 1 Nicholson Street Melbourne, VIC 3000 Australia	State of Nationality AU
	State of Residence AU
	Telephone No. -
	Facsimile No. -
3. Further observations, if necessary:	
4. A copy of this notification has been sent to:	
<input checked="" type="checkbox"/> the receiving Office	<input type="checkbox"/> the designated Offices concerned
<input type="checkbox"/> the International Searching Authority	<input checked="" type="checkbox"/> the elected Offices concerned
<input checked="" type="checkbox"/> the International Preliminary Examining Authority	<input type="checkbox"/> other:

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer F. Baechler
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

TENT COOPERATION TRE, Y

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
 US Department of Commerce
 United States Patent and Trademark
 Office, PCT
 2011 South Clark Place Room
 CP2/5C24
 Arlington, VA 22202
 ETATS-UNIS D'AMERIQUE
 in its capacity as elected Office

Date of mailing (day/month/year) 23 February 2001 (23.02.01)	
International application No. PCT/AU00/00824	Applicant's or agent's file reference 2313242/PHH
International filing date (day/month/year) 07 July 2000 (07.07.00)	Priority date (day/month/year) 09 July 1999 (09.07.99)
Applicant THOMSON, Steven et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

19 January 2001 (19.01.01)

☐ in a notice effecting later election filed with the International Bureau on:
2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer F. Baechler Telephone No.: (41-22) 338.83.38
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 01 AUG 2001

WIPO

PCT

Applicant's or agent's file reference 2313242/PHH/JCC/TJS	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).	
International Application No. PCT/AU00/00824	International Filing Date (<i>day/month/year</i>) 7 July 2000	Priority Date (<i>day/month/year</i>) 9 July 1999
International Patent Classification (IPC) or national classification and IPC Int. Cl. ⁷ F42B 3/103; F42D 1/22		
Applicant ORICA EXPLOSIVES TECHNOLOGY PTY LTD et al		

1.	This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.																
2.	This REPORT consists of a total of 5 sheets, including this cover sheet. <input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of 5 sheet(s).																
3.	This report contains indications relating to the following items: <table style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 5%;">I</td> <td><input checked="" type="checkbox"/> Basis of the report</td> </tr> <tr> <td>II</td> <td><input type="checkbox"/> Priority</td> </tr> <tr> <td>III</td> <td><input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td>IV</td> <td><input type="checkbox"/> Lack of unity of invention</td> </tr> <tr> <td>V</td> <td><input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td>VI</td> <td><input type="checkbox"/> Certain documents cited</td> </tr> <tr> <td>VII</td> <td><input checked="" type="checkbox"/> Certain defects in the international application</td> </tr> <tr> <td>VIII</td> <td><input type="checkbox"/> Certain observations on the international application</td> </tr> </table>	I	<input checked="" type="checkbox"/> Basis of the report	II	<input type="checkbox"/> Priority	III	<input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	IV	<input type="checkbox"/> Lack of unity of invention	V	<input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	VI	<input type="checkbox"/> Certain documents cited	VII	<input checked="" type="checkbox"/> Certain defects in the international application	VIII	<input type="checkbox"/> Certain observations on the international application
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VII	<input checked="" type="checkbox"/> Certain defects in the international application																
VIII	<input type="checkbox"/> Certain observations on the international application																

Date of submission of the demand 19 January 2001	Date of completion of the report 19 July 2001
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer JEFFREY CARL Telephone No. (02) 6283 2543

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed.
- ☒ the description, pages 1, 4-10, as originally filed,
pages , filed with the demand,
pages 2-3 , received on 14 May 2001 with the letter of 14 May 2001
- ☒ the claims, pages , as originally filed,
pages , as amended (together with any statement) under Article 19,
pages , filed with the demand,
pages 11-13, received on 14 May 2001 with the letter of 14 May 2001
- ☒ the drawings, pages 1/2-2/2, as originally filed,
pages , filed with the demand,
pages , received on with the letter of
- ☐ the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
pages , received on with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. ☒ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☒ the claim, No. 1 as originally filed
- ☐ the drawings, sheets/fig.

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims No: 22

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims No. 22 are so unclear that no meaningful opinion could be formed (*specify*):

This claim is an all-encompassing type of omnibus claim directed to any of the disclosed steps and/or features when taken individually and/or collectively. As such, the scope of this claim is indeterminate.

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claim No. 22

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims 1-21	YES
	Claims	NO
Inventive step (IS)	Claims 1-21	YES
	Claims	NO
Industrial applicability (IA)	Claims 1-21	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)

Claims 1-21: The invention defined in the amended claims is a primer casing and a method of loading a borehole using the primer casing, wherein the primer casing is characterised as comprising a sleeve portion and a leading portion and wherein the leading portion comprises a nose cone provided at one end as an extension of the sleeve portion.

No individual citation or obvious combination of citations discloses a primer casing having all of these features.

The closest art of US 3939771 discloses a primer casing constructed of two separate parts with one part corresponding to a sleeve portion and the other part corresponding to a leading portion including a nose cone. Each part is adapted to attach to respective ends of a cylindrical package of explosive. There is no disclosure or suggestion that the leading portion could be formed as an extension of the sleeve portion as is defined in the amended claims.

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Claims 20-22 do not comply with the requirements of Rule 6.2(a) in that each of the claims include references to features disclosed in the description and/or drawings.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU00/00824**A. CLASSIFICATION OF SUBJECT MATTER**Int. Cl. ⁷: F42B 3/103; F42D 1/22

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: F42B 3/10, 3/103; F42D 1/08, 1/22

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

AU: IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

DWPI: (PRIMER or DETONAT+ or EXPLOSIVE?); (BORE+ or SHOT+ or BLAST+); (PLAC+ or LOCAT+ or ANCHOR+ or ENGAG+ or SUSPEN+); (ARM? or LEG? or SPREAD+ or EXPAN+)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3939771 A (McREYNOLDS) 24 February 1976 Whole document	1-22
A	AU 28087/95 (EIJKELKAMP AGRISEARCH EQUIPMENT B.V.) 25 January 1996	
A	US 4278025 A (McREYNOLDS) 14 July 1981	

☐ Further documents are listed in the continuation of Box C
 ☒ See patent family annex

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

7 August 2000

Date of mailing of the international search report

14 AUG 2000

Name and mailing address of the ISA/AU

 AUSTRALIAN PATENT OFFICE
 PO BOX 200, WODEN ACT 2606, AUSTRALIA
 E-mail address: pct@ipaustalia.gov.au
 Facsimile No. (02) 6285 3929

Authorized officer

JEFFREY CARL

Telephone No : (02) 6283 2543

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU00/00824

Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos :
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos : 23
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
This claim is an all-encompassing type of omnibus claim directed to any of the disclosed steps and/or features when taken individually and/or collectively. As such, the scope of this claim is indeterminate.
3. ☐ Claims Nos :
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/AU00/00824

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report				Patent Family Member	
US	3939771	CA	1023980		
AU	28087/95	NL	9401127	WO	9601408
US	4278025	CA	1137341		
END OF ANNEX					

REPLACED BY
ART 34 AMDT

- 2 -

unauthorised attempt to withdraw the primer, should preferably be minimised or avoided. In the past, "spiders" in the form of a circular band having outwardly projecting rigid legs have been used for retaining a primer in the desired position in a blasthole. However, such "spiders" have generally been provided as separate articles which must be fixed to a primer
5 at the blasthole or mine site. As well as this being time-consuming, the packaging and transportation of such "spiders" is inefficient due to their irregular shape and rigidity of the projecting legs.

The present invention seeks to address these problems by providing a primer casing which
10 is adapted to receive a primer and to be positioned in a blasthole even when the blasthole contains obstructions and/or discontinuities. Furthermore, the primer casing of the present invention enables the primer to be retained at a desired location within the blasthole, irrespective of the orientation of the blasthole or any unauthorised attempt to withdraw the primer. The primer casing thus permits improved loading of a blasthole.

15 Accordingly, the present invention provides a primer casing comprising a sleeve portion and a leading portion, wherein the sleeve portion is adapted to receive a primer and comprises a blasthole engagement means, and wherein the leading portion comprises a nose cone.

20 The sleeve portion of the primer casing is adapted to receive a primer and the exact construction of the sleeve portion will depend upon the shape and configuration of the primer. Typically however the primer is in the form of a cylindrical cartridge and the sleeve portion defines a cylindrical passage (or cavity) into which the primer cartridge may
25 be slidably inserted. Other configurations for the sleeve portion are of course possible.

The passage of the sleeve portion is usually sized relative to the primer cartridge so that the cartridge is frictionally retained in the cavity or passage. However, in a preferred embodiment the primer casing is provided with means for retaining the primer within
30 passage of the primer casing. The retaining means may be a tab, preferably a centre-hinged (reversible) tab, which is integral with the sleeve portion of the casing and which may be extended into the cavity after insertion of the primer to engage the primer body

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(which may be suitably adapted to be so-engaged) or to support the end of the primer. The effect is that the primer is retained in position within the sleeve portion of the primer casing.

- 5 The leading portion of the primer casing comprises a nose cone. The nose cone may be provided at one end, and as an extension, of the sleeve portion of the casing. The nose cone is less prone to snagging on obstructions and/or discontinuities than a flat-ended construction. Typically, the apex of the nose cone is rounded. The nose cone is typically deflected by obstructions and/or discontinuities rather than being snagged on them. Thus,
10 the nose cone can assist in guiding the primer casing past and around obstructions and/or discontinuities in the blasthole.

In a preferred embodiment, the nose cone is hollow so that when, in place, the end of the primer does not contact the inside surface of the cone. In this embodiment the nose cone is
15 able to absorb shock which might otherwise be communicated to the primer when the primer casing impacts against an obstruction and/or discontinuity in, or the end of, a blasthole during positioning of the primer casing in the blasthole. This helps to avoid damage to the primer. Use of a hollow nose cone also provides a saving in materials cost.

- 20 The blasthole engagement means usually takes the form of a projection from the sleeve portion of the primer casing. In a preferred embodiment of the invention the blasthole engagement means is movable between a retracted position and a blasthole engagement position.

- 25 In the retracted position the blasthole engagement means may abut the sleeve portion of the casing. For example, in the retracted position the blasthole engagement means may be integral with the casing and attached thereto by a flexible hinge which enables the blasthole engagement means to be movable between the two positions. Alternatively, in the retracted position, the blasthole engagement means may be held adjacent to or within
30 the casing, for example using retaining cord, wire or band. With the blasthole engagement means in the retracted position the primer casing lends itself to being packed and transported in an economic manner.

CLAIMS:

1. A primer casing comprising a sleeve portion and a leading portion, wherein the sleeve portion is adapted to receive a primer and comprises a blasthole engagement means, and wherein the leading portion comprises a nose cone.
5
2. A casing according to claim 1, wherein the primer is in the form of a cylindrical cartridge.
3. A casing according to claim 1 or 2, wherein the sleeve portion defines a cylindrical passage into which the primer may be slidably inserted.
- 10 4. A casing according to any one of the preceding claims, wherein the primer casing further comprises a primer retaining means.
5. A casing according to any one of the preceding claims, wherein the nose cone is provided at one end and as an extension of the sleeve portion.
6. A casing according to any one of the preceding claims, wherein the apex of the nose cone is rounded.
15
7. A casing according to any one of the preceding claims, wherein the blasthole engagement means comprises a projection from the sleeve portion.
8. A casing according to any one of the preceding claims, wherein the blasthole engagement means is moveable between a retracted position and a blasthole engagement position.
20
9. A casing according to claim 8, wherein the blasthole engagement means is integral with the casing and attached thereto by a flexible hinge which enables movement between retracted and blasthole engagement positions.
10. A casing according to claim 8 or 9, wherein in the retracted position the blasthole engagement means abuts the sleeve portion.
25
11. A casing according to any one of claims 7 to 10, wherein in the blasthole

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engagement position the projection is inclined outwardly relative to the primer casing and rearwardly relative to the leading portion.

12. A casing according to any one of claims 7 to 11, wherein the projection comprises at its end a blasthole wall engagement means.
- 5 13. A casing according to any one of the preceding claims, further comprising a loading hose engaging means.
14. A casing according to claim 13, wherein the sleeve portion is adapted to engage the end of a loading hose.
- 10 15. A casing according to claim 14, wherein the sleeve portion adapted to engage the end of the loading hose has an internal dimension greater than the external dimension of the end of the loading hose.
16. A casing according to claim 14 or 15, further comprising means for preventing contact between the primer and loading hose when the loading hose is engaged by the sleeve portion.
- 15 17. A casing according to any one of the preceding claims, comprising a number of apertures in the sleeve portion.
18. A method of loading a blasthole, which method comprises inserting a primer into a primer casing as claimed in any one of claims 1 to 17 and positioning the primer casing at a desired location in the blasthole.
- 20 19. A method according to claim 18, wherein the primer casing is positioned using a loading hose.
20. A method according to claim 18 or 19, further comprising charging the blasthole with bulk explosive.
21. A primer casing substantially as hereinbefore described.
- 25 22. A method of loading a blasthole substantially as hereinbefore described.

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23. The steps and features disclosed herein or referred to or indicated in the specification and/or claims of this application, individually, collectively, and any and all combinations of any two or more of said steps or features.